May 17, 2017

URANIUM MINING EPA HEARINGS
PUBLIC INFORMATION SESSIONS AND HEARING
Written Statements

PROPOSED DEWEY-BURDOCK PROJECT ISL MINE NEAR EDGEMONT, SOUTH DAKOTA

ENVIRONMENTAL IMPACT STATEMENT
The SEIS Fails to Consider Connected Actions

Ex. 6 Personal Privacy (PP)

Public Comment

My concerns regarding the Dewey-Burdock Project are centered around the problems of artesian flow and, interactions with the Remediation of Buried Chemical Warfare Materiel located at the Black Hills Army Depot less than 10 miles to the south.

Furthermore, Dewey-Burdock Project experts propose land application areas on river terraces and deep well injection into aquifers within the project boundaries under the sanctions of EPA permits to be exempted from the **Safe Drinking Water Act** (SDWA 1977 & 1986). Surface water flow in channels is ephemeral except for perennial Beaver Creek. **U.S. Army Corps of Engineers permit application under Section 404 of the Clean Water Act will be required before conducting work in jurisdictional wetlands** (see Surface Waters and Wetlands SEIS Section 4.5.1.1). (see Section 404 of the Clean Water Act - exhibit A_cwa_sec404doc.pdf).

The Dewey-Burdock Project will transmit the applied and/or injected waste directly into the area of the Beaver Creek Watershed within the Upper Cheyenne River Watershed of the Cheyenne River to flow eastward throughout the State of South Dakota and into the Missouri River affecting the entire Missouri River Basin. (see exhibit G_map Beaver Creek Watershed and exhibit H_source_of_missouri_river_missouri_basin_map-1200).

Water Quality

Other areas are dealing with primary and secondary water quality issues refer to Southern Black Hills Water System Appraisal Report (see exhibit C_SoBlackHills.pdf).

For example, the town of Edgemont has quality concerns with primary drinking water standards relative to some category(ies) of radionuclides (e.g., alpha particles that can result in increased risk of cancer).
Edgemont has shown a test of 17 milligrams per liter (mg/L) on alpha particles, and the U.S. Environmental Protection Agency (EPA) limit is 15 milligrams per liter (mg/L).

The problem of artesian flow

Artesian springs act as a "relief valve" for the aquifers and are an important mechanism in controlling water levels in these aquifers. Springflow of many large artesian springs changes very slowly in response to long-term climatic conditions. Artesian springflow could be diminished by large-scale well withdrawals near springs, thus impacting surface-water resources. Large-scale development of the aquifers has the potential to influence the balance of the unique and dynamic "plumbing system" in the Black Hills area that controls interactions between ground-water levels and artesian springflow (see exhibit D_The_Black_Hills_Hydrology_Study.pdf).

Artesian flow occurs when there is a hydrologic connection, through faults or highly permeable strata, between groundwater sources high on the landscape and the land surface lower down. The weight of water in overlying strata exerts pressure downward into water within the uranium-bearing strata, which can then be released as artesian water flow (like a fountain) where the topographically lower uranium-bearing strata is exposed at the surface, or where it is punctured by drilling. Artesian flow was observed or predicted by Powertech in their Dewey-Burdock Project proposal, and was observed directly at the Black Hills Army Depot less than 10 miles to the south (U.S. Army Corps of Engineers 1992).

In order for artesian flow to occur at the Black Hills Army Depot, the water must originate topographically higher in the Black Hills and pass through the Dewey-Burdock project area boundary. Were this artesian water flow to happen with oxidant-charged lixiviate, and/or the brackish fossil aquifers, the

contaminated groundwater would rust any metal-contained ordnance and release its contents into the environment.

Concluding Remarks

It is very likely that the oxidants used to free the uranium and/or the brackish fossil aquifers and the connected action of artesian flow as observed by the U.S. Army Corps of Engineers will also cause the destruction of underground storage containers i.e. Buried Chemical Warfare Materiel located at the Black Hills Army Depot less than 10 miles to the south of the Dewey-Burdock Project area and release their contents into the area's ground and surface waters. This huge munitions depot handled thousands of tons of chemical warfare agents such as sarin, soman, toban, GB, and VX, plus mustard, phosgene, and Lewisite. [HYPERLINK "http://rapidcityjournal.com/news/local/seismic-crews-want-to-test-up-to-acres-northwest-of/article_2d670e86-f90b-5db4-8bd6-19075034e04e.html"]

References

U.S. Army Corps of Engineers. 1992. Preliminary assessment of ordinance contamination at the former Black Hills Army Depot, South Dakota. Final Archives Search Report (Contract No. DACA-87-91-D-0037), pp.314

USACE (U.S. Army Corps of Engineers). 1992. "Final Archive Search Report, Preliminary Assessment of Ordnance Contamination at the Former Black Hills Army Depot, South Dakota.: ML13053A145. Huntsville, Alabama

USACE (U.S. Army Corps of Engineers). 2012. "Final Work Plan for Black Hills Army Depot Remedial Investigation and Feasibility Study at Fall River County, South Dakota." ML13053A152, Huntsville, Alabama

LaGarry, H. E., C. Belile, & H. Gaddie. 2012. Revised lithostratigraphic correlation of the Arikaree Group from northwestern Nebraska to southwestern South Dakota. Proceedings of the 122nd Annual Meeting of the Nebraska Academy of Sciences, pp. 92- 93.

U.S.NRC Office of Federal and State Materials and Environmental Management Programs. 2014. Environmental impact statement for the Dewey-Burdock Project in Custer and Fall River Counties, South Dakota: Supplement to the Generic Environmental Impact Statement (SEIS) for In-Situ Leach Uranium Milling Facilities. Final Report Chapters 6 to 11 and Appendices NUREG-1910 Supplement 4, Vol. 2, Summary of Environmental Impacts Table 9-1 pp 9-5 Surface Waters and Wetlands (SEIS Section 4.5.1.1)

Southern Black Hills Water System Appraisal Report
Rural Water Supply Program Dakotas Area Office, Great Plains Region
Dakotas Area Office
Vaughan Gerlach, Civil Engineer

Great Plains Regional Office
Kip Gjerde, P.E., Civil Engineer Mark Phillips, Geologist Gary Davis, Resource Management Specialist
U.S. Department of the Interior Bureau of Reclamation Bismarck, North Dakota March 2011
Summary of Appraisal Investigation Water Quality Section 2.3.4 pp. 9

The Black Hills Hydrology Study
Janet M. Carter United States Geological Survey
U.S. Department of the Interior
USGS Fact Sheet FS-046–02 June 2002

Fecal Coliform Bacteria Total Maximum Daily Load (TDML) for
Beaver Creek, Fall River County, South Dakota January 2010
Aaron M. Larson SD DENR Water Resource Resource Assistance Program
Introduction Figure 1-1 Beaver Creek Watershed Within the Upper Cheyenne River Watershed pp. 7

SECTION 404 OF THE CLEAN WATER ACT

F.2. Any discharge of dredged or fill material into the navigable waters incidental to any activity having as its purpose bringing an area of the navigable waters into a use to which it was not previously subject, where the flow or circulation of navigable waters may be impaired or the reach of such waters be reduced, shall be required to have a permit under this section.